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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/025,529 | 12/19/2001 | Martin A. Parker | 81661SHS | 6190 |

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EXAMINER

HENDERSON, ADAM

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/025,529 | | PARKER ET AL. | |
| | Examiner | | Art Unit | |
| | Adam L. Henderson | | 2615 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 11-26 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 27-30 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group 1 consisting of claims 8-10; 27; and 30, with claims 1-7; 28; and 29 as linking claims, in the reply filed on September 27, 2005 is acknowledged.
2. Claims 11-26 and 31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 27, 2005.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4, 5, 8, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakoh et al. (US Patent 6,704,434).

With regard to claim 1, Sakoh et al. teaches a method for generating an enhanced compressed digital image, comprising the steps of:

- a. capturing a digital image (column 8 lines 23-28)
- b. generating additional information relating to the importance of photographed subject and corresponding background regions of the digital image (column 4 lines 20-29)

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- c. compressing the digital image to form a compressed digital image (column 2 lines 48-52)
- d. associating the additional information with the compressed digital image to generate the enhanced compressed digital image (column 4 lines 29-32)
- e. storing the enhanced compressed digital image in a data storage device (column 4 lines 29-32).

With regard to claim 4, Sakoh et al. teaches the digital image is one of a sequence of digital motion images (column 2 lines 55-63).

With regard to claim 5, Sakoh et al. teaches that the step of compressing the digital image employs JPEG compression technique (column 21 lines 38-40).

With regard to claim 8, Sakoh et al. teaches that the additional information is a main subject belief map containing a continuum of belief values relating to the importance of the subject and background regions of the digital image (column 4 lines 20-37). Since a belief map is nothing more than a file containing the importance values for the image, the saved additional information of Sakoh et al. fulfills this requirement since it constructs a file (a belief map) having data related to the importance of each region.

With regard to claim 30, Sakoh et al. teaches a system for generating enhanced compressed digital image comprising:

- a. means for compressing a digital image to form a compressed digital image (column 2 lines 48-52), since there is a method it is inherent that there must be a means to accomplish the method

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b. means for generating additional information that relates to a photographed subject's importance with regard to the captured digital image, and corresponding background regions of the captured digital image (column 4 lines 20-29), since there is a method it is inherent that there must be a means to accomplish the method

c. means for weighing the additional information relative to the photographed subject's importance with regard to the captured digital image such that weighted additional information is produced (column 5 lines 8-19), weighting the regions creates three groups; groups with low weight are discarded, groups with some weight get high compression, and groups with a great deal of weight get low compression; since there is a method it is inherent that there must be a means to accomplish the method

d. means for associating the weighted additional information with the compressed digital image to produce the enhanced compressed digital image (column 4 lines 29-32), since there is a method it is inherent that there must be a means to accomplish the method.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Nishio et al. (US Patent 6,335,763).

Sakoh et al. discloses a method as in claim 1 above, but does not disclose the additional information is compressed prior to being associated with the digital image.

Nishio et al. discloses compressing additional information in an image recording process (column 12 lines 36-40)

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of Sakoh et al. to include the compression of additional information as taught by Nishio et al. in order to maximize the use of the memory space when saving the additional information (Nishio et al. column 12 lines 36-40). It would be obvious to do this before associating it with the image so that only the additional data is compressed by this method, not both.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Nishio et al. (US Patent 6,335,763) as applied to claim 2 above, and further in view of Zeck (US Patent 6,668,093).

A method is disclosed as in claim 2 above, Sakoh et al. and Nishio et al. do not disclose that the compression of the additional information as being done with a lossless compression technique.

Zeck discloses the use of lossless compression (column 1 lines 9-10).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the additional information compression of Nishio et al. to include lossless compression as taught by Zeck in order to get very good compression (column 1 lines 9-12) while still maintaining data integrity.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Christopoulos et al. "The JPEG2000 Still Image Coding System: An Overview".

Sakoh et al. discloses a method as in claim 1 further disclosing the use of JPEG compression techniques (column 21 lines 38-40), not disclosed is the use of JPEG2000 compression techniques.

Christopoulos et al. discloses that JPEG2000 is a continuation of JPEG further refining the still image compression techniques (page 1, column 2, lines 5-22).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of Sakoh et al. to use JPEG2000 instead of JPEG as taught by Christopoulos et al. in order to obtain the benefits of the newer compression technique, such as superior low bit-rate performance and others (advantages listed on pages 2-3 of Christopoulos et al.).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Komiya et al. (US Patent 6,211,911).

Sakoh et al. discloses a method as in claim 1 above but does not disclose using multiple image sensors simultaneously.

Komiya et al. disclose multiple sensors (1a-1c, FIG. 1) that are used simultaneously (column 5 lines 15-24).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of Sakoh et al. to include multiple sensors as taught by Komiya et al. in

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order to create a larger imaging area. Komiya teaches the joining of the images (column 3 lines 1-7). This obtains the user a larger imaging area.

9. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Strolle et al. (US Patent 5,673,355).

Sakoh et al. discloses a method as in claim 1 above but does not disclose the calculation of a representation of high-frequency components.

Strolle et al. discloses the calculation of a representation of high-frequency components; the representation is made by halving their strength (column 45 lines 25-28).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of Sakoh et al. to include the high-frequency alterations taught by Strolle et al. in order to reduce the need for compression (Strolle et al. column 45 lines 11-14). This would allow for a lower compression rate with similar results, further it would be obvious to include this with the additional information since it would be advantageous to have the additional data file be able to inform the decompressing machine to know what alterations have been made to the image.

10. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Talluri et al. (US Patent 6,393,056).

Sakoh et al. discloses a method as in claim 1 above but does not disclose tracking eye movement.

Talluri et al. discloses the use of eye tracking devices, made as part of the viewfinder, to select the subject of the image and to use that information to apply lower compression to the subject than to the surrounding image (column 7 lines 33-44 and column 8 lines 5-19).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method Sakoh et al. to include the eye tracking method of Talluri et al. in order to provide a method of selecting the subject of the image (column 8 lines 5-19). Further it is obvious to encode this data with the image so the decoding device knows what is the subject and what is the background.

11. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh et al. (US Patent 6,704,434) in view of Madden et al. (US Patent 6,297,825).

Sakoh et al. discloses a method as in claim 1 above but does not disclose the use of a depth map.

Madden et al. discloses the use of a sensor to create a depth map/depth estimation (column 6 lines 44-49).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of Sakoh et al. to include the depth map of Madden et al. in order to smooth a continuous series of images (Madden et al. column 5 lines 53-61). It would be obvious to encode this with the image to keep this information available for any future uses it might have.

Allowable Subject Matter

12. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lobo et al. (US Patent 5,835,616) discloses the use of computer vision to isolate the face and facial features, structural and semantic saliency features (column 2 lines 20-29).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam L. Henderson whose telephone number is 571-272-8619. The examiner can normally be reached on Monday-Friday, 8am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALH
October 11, 2005


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